

# DAILY LIFE IN A MISSION

## CORN: A PRODUCT FROM THE INDIANS

### TEACHER INFORMATION

**NEED  
TO  
KNOW**

**Background:** *A great part of mission Indians' days involved growing and preparing food. One major food source was corn. Indians throughout the Americas grew corn for thousands of years before Columbus' voyages. Anthropologists have found petrified corn cobs over 5000 years old in Indian ruins. Columbus took corn back to Spain, and from there, corn was introduced to western European farmers.*

*The Indian name for corn is maize (ma-hiz). Indians helped early European settlers by teaching them how to grow corn to eat. Indians used a small fish as fertilizer when planting each kernel of corn. They taught the settlers to make corn bread, corn pudding, corn soup, and fried corn cakes.*

*Indians had purposely transformed corn by hybridizing it. They took pollen from one variety of corn and fertilized another variety to create new corn. Each strand of corn silk is attached to a kernel of corn. Pollen must travel down the silk in order to fertilize its kernel. After manual pollination, the corn silk was covered with a husk to prevent fertilization by an unwanted strain. Modern farmers continue to cultivate and improve the quality of corn in a similar manner.*

*Corn grows easily in regions that receive too much or too little moisture for wheat or rice. Indians cultivated rapid-growing varieties for areas as cold as Canada and Chile, while other types of corn flourished in the heat of the Amazon. Inca farmers cultivated it on the terraced sides of steep Andean Mountains, and Hopi people irrigated it in the hottest and driest deserts of the American Southwest.*

*In Central America and Mexico, women soaked corn in water to which they added lime or ashes to produce nixtamal. They then ground it using a mano y metate to produce corn meal to make bread or other food products*

*The Indians who lived in Texas had various methods of obtaining food. Some were hunters; some were plant gatherers; others were fishermen, while still others were farmers. Corn was obtained through barter with Indian farmers. When the Spaniards arrived to establish settlements and missions in central Texas, Coahuiltecan Indians became a part of the mission community. They learned to raise livestock and practice agriculture. It was many years before the mission Indians gave up their preference for corn and accepted wheat as their staple.*

#### TEKS (Texas education standards)

- *Listen actively and purposefully in a variety of settings*
- *Offer observations, make connections, react, speculate, interpret, and raise questions in response to texts*
- *Determine distinctive and common characteristics of cultures through wide reading*
- *Articulate and discuss themes and connections that cross cultures through letters, reviews, poems, narratives, and instructions*
- *Identify the mathematics in everyday situations*

- *Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness*
- *Select or develop an appropriate problem-solving strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem*
- *Use tools such as real objects, manipulatives, and technology to solve problems*
- *Conduct field and laboratory investigations following home and school safety procedures and environmentally appropriate and ethical practices*
- *Demonstrate safe practices during field and laboratory investigations*
- *Use critical thinking and scientific problem solving to make informed decisions*
- *Describe ways people have adapted to and modified their environment in Texas, past and present*
- *Identify reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs*
- *Analyze the consequences of human modification of the environment in Texas, past and present*
- *Explain how people in different regions of Texas earn their living, past and present*
- *Explain how geographic factors have influenced the location of economic activities in Texas*

## **Materials**

- *“A Kid’s Guide to Mission Espada”, one for each student*

*For corn grinding activity (corn is not to be consumed)*

- *Dried corn cobs with husks (preferable) or  
Dried corn kernels (available at feed stores)*
- *Metate and mano (may substitute a mortar and pestle that may be borrowed from a high school science teacher if not available at one's school.)*

*For cornbread activity*

- *Large mixing bowl*
- *Mixing spoon*
- *Several measuring spoons (tablespoon)*
- *Several measuring cups (1/2 cup)*
- *Clock with second hand*
- *Hot pads*
- *Cast iron skillet*
- *Ingredients for cornbread (see Student Information sheet)*

*For corn husk doll activity*

- *Corn shucks (available at grocery stores for making tamales.)*
- *Scissors*
- *Large container (to soak corn shucks)*
- *Paper towels*
- *Marking pens*
- *Cloth and other items (to decorate the dolls)*
- *Glue*

## Teaching Hints and Safety Precautions

1. *Flat and rounded rocks for the metate and mano would make this activity more realistic. Stone will add grit to the corn meal, which was common in food items of the time.*
2. *The math processes used in the Explanation Section are not specified. The processes can be varied depending on student ability and math skills being developed.*
3. *Assign class to groups before making cornbread. Determine the task for which each student will be responsible.*
4. *Students should not carry or touch the cooked corn bread until it reaches a safe temperature. The same precaution applies to the cooking oil.*
5. *No food should ever be eaten in a science laboratory setting. Do not use the corn your students grind. The corn may have been contaminated in the feed store. The mortar and pestle may contain foreign substances. Substitute commercial cornmeal from the grocery to make your corn bread for consumption.*

## References

*Aliki. Corn Is Maize: The Gift of the Indians. New York, New York. Harper Collin Publishers, 1976.*

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*Warren, Betsy. Indians who Lived in Texas. Dallas. Texas: Hendricks-Long Publishing Company. 1981.*

*Wigginton, Eliot, ed. Foxfire 3. "Corn Shuck Mops, Dolls and Hats". Garden City, New York: Anchor Press/Doubleday. 1975.*

# DAILY LIFE IN A MISSION

## CORN: A PRODUCT FROM THE INDIANS



### STUDENT INFORMATION

**Objective:** You will be learning about corn, a plant product used and improved by Indians well before the Spaniards arrived in the Americas. Corn played an important role as a food product in communities established by the Europeans.

### Engagement

Visit the Mission. Your teacher will provide you *A Kid's Guide to Mission*



*Espada*, which has a map on page 3. Stand somewhere in the mission compound and mark on your map where you are standing. Looking at the map's compass, what do you see to your north, to your south, to your east, and to your west?

Complete the *Finding Your Way Around* activity. The information on pages 7 and 8 will help you. The following definitions will also help you find the proper locations.

- ♦ **Acequia:** ditch that carried water to the fields to irrigate the crops
- ♦ **Labores:** fields where corn was grown
- ♦ **Granary:** storage building for corn
- ♦ **Quarters:** homes for Indian families living in the mission
- ♦ **Courtyard:** Gathering place for the community, located near the missionary's home. (Site where a woman may have ground cornmeal for the missionary.)

Today the fields surrounding Mission Espada are the same fields used by the mission Indians 250 years ago. Many sites in the mission were important in the production and use of corn. Circle the locations that mission Indians might have used corn.



### Exploration

You will grind corn to produce cornmeal to use to make corn bread.

In a group of three students:

1. Student #1 measures out  $\frac{1}{2}$  cup of corn kernels.
2. Using a metate and mano, grind the kernels into cornmeal. All three students get a turn.
3. Student #2 records the time it takes to grind the corn to cornmeal.
4. Student #3 measures (in tablespoons) the amount of cornmeal produced from  $\frac{1}{2}$  cup of kernels.

### Recipe for Cornbread

1 1/2 cups of cornmeal	1 teaspoon of salt
1/2 cup of wheat flour	1 tablespoon of baking powder
1 cup of milk	1 egg
	2 tablespoons of vegetable oil

As a class, you will:

1. Review safety rules when working around heat.
2. Preheat oven to 400° Fahrenheit.
3. Measure ingredients into a bowl. (This recipe will make about twelve slices. Adjust the recipe for class size.)
4. Mix until all ingredients are moist. Batter will be lumpy.
5. Pour 2 tablespoons of oil into the skillet so that the bottom is completely covered.
6. Heat skillet in the oven for five minutes.
7. Remove hot skillet from the oven and pour the batter into it.
8. Bake at 400°F for 20 minutes or until golden brown.
9. Cut into enough pieces so everyone can have a piece.

### Explanation

1. Approximately how many cups of corn would you have to grind to get 1½ cups of cornmeal to make this recipe? (One cup = 16 tablespoons.)
2. Approximately how much time would it take to grind 1½ cups of cornmeal using the mortar and pestle?
3. If the recipe makes about twelve pieces of cornbread, approximately how many times must this recipe be used to serve one piece of corn bread to a mission population of 200?

4. Approximately how many cups of cornmeal would be needed to feed these 200 mission Indians?
5. Approximately how long would it take to grind enough cornmeal to feed them?



### Elaboration

Pretend we are mission Indian children and make dolls from corn shucks.

Corn kernels are actually seeds growing on a cob of the corn plant. The cob is covered with shucks to protect the kernels as they grow. After the corn matures, the shucks are removed. Both settlers and Indians used the shucks for many purposes. Older children often made corn shuck dolls for themselves and for their younger brothers and sisters.

Procedure:

1. Place corn shucks in a container and cover with water. Allow them to soak overnight.
2. Remove shucks from the water and lightly pat them dry with a paper towel.
3. Shred one or two of the shucks into tiny strips. You will use them as "string" to tie your doll together.
4. To make the doll's head, roll a piece of paper towel into a ball about the size of a golf ball. Cover with corn shucks and tie tightly.
5. Tie several shucks together to form the body. These can be shaped to form the skirt or pants. See **Figure 1**.



Figure 1

Figure 2



6. Roll shucks into a long rod shape. (This will be the arms.) Tie in place. See **Figure 2**.



7. Tie another strip for hair or a hat. See **Figure 3**.



**Figure 3**

8. Allow the doll to dry overnight.  
9. Dress your doll and make his or her face using cloth, marking pens, and other decorative materials that are available. See **Figure 4**.  
10. You may also refer to the pictures for an alternate method of making your cornhusk doll.



**Figure 4**

### **Evaluation**

Plan and construct a collage called Gift from the Indians. Include as many products as possible that we use today that depend on corn. Research using technology and multimedia resources.

Evaluation Criteria:

40%

You completed accurate collage showing products we use that depend on corn.

60%

You participated in and accurately completed

1. activities while visiting San Antonio Missions National Historical Park,
2. grinding corn and making cornbread (using the data), and
3. making corn shuck dolls.